**inhabitable remediation machine**

If a machine were to assemble itself on Refshaleoen to clean up the dirt of the site’s industrial past, what would it look like and how would it operate? The environmental information of ground soil contamination, wind intensity and trajectory, and human occupation frequencies became the logics by which the machine took form. In developing the work it was important to maintain a certain degree of human interaction within the machine, tying the inhabitant to the processes of remediation. Taking energy independence and resilience as necessities, the machine uses seasonal wind surges to perform its most intensive actions: excavation and moving of the ground surface. A combination of mycoremedial and phytoremedial strategies clean lead and hydrocarbon saturated soil with approximately 90% efficiency, while remaining contaminants are sequestered with fish bones to make them non-biologically available. When its life cycle is complete the machine's exoskeleton remains as a weathered relic of industry. It is no longer a machine but a facet of the landscape, its fixtures and armatures becoming opportunities for appropriation.

The canopy of the machine is a dynamic field of lightweight, translucent fins, capable of harvesting wind energy. Each fin measures a half meter by one meter, and is attached via a ratcheting mechanism to a central turbine. Installed in eight meter by eight meter sections, they produce energy by the agglomeration of many thousands of fins, each capable of producing a few watts of power. The array as a whole is then capable of generating upwards of 400 kWh annually. The visual effect of each fin moving independently in the wind is not unlike that of a field of grain rippling and flowing, creating a sense of wonder as one inhabits the spaces below. A small photovoltaic cell on each fin provides enough energy to power an LED strip at the bottom edge of each unit, allowing the dynamic effect to be observed at night and during the darker months of the year.

During the remedial cycles of the machine, the contaminated ground plane within the retaining wall is not accessible. A system of catwalks linking the supporting structural system allows both workers and visitors to move around the remediation pods, observing and learning about the various techniques being used. The larger gantry crane systems allow workers to perform the excavation, remediation, and landscaping procedures. Once the remedial processes are complete, the entire site will become accessible. Buildings at the northwest corner of the site, previously used to house workers and the supporting functions of remediation, might now be converted into an education center. The knowledge gained during the bioremediation of this site can then be disseminated and further analyzed with the hope that it will be useful for other contaminated areas. A significant portion of the resultant landscape, likely the areas of lowest elevation, would be allowed to develop as areas of habitat, helping to build and support a strong natural ecosystem within the city. The buried remnants of structure in the landscape will provide the opportunity to erect large pavilions which might become spaces of informal gathering as well as more festive events.

**environmental impact statement**

As a remediation machine, this project aims to both minimize its negative environmental impact and also to contribute positively to the health of the site. As such, the construction of the machine would make use of recycled materials wherever possible for its alloy structural systems, and attempt to fabricate most of the components within the Copenhagen metropolitan area. The surface of the retention wall surrounding the contamination zone will be constructed of untreated lumber. As this lumber biodegrades over time, the soil will move toward a condition of stasis: a gently sloping topography generated by the function of excavation and remediation. In terms of positive impact, bioremedial strategies include mycoremediation and phytoremediation. Mycoremediation takes advantage of the ability of certain fungal species, such as oyster mushrooms, to break down hydrocarbons into their constituent inert elements. Phytoremediation makes use of plant species such as rapeseed and hemp dogbane which act as hyperaccumulators of heavy metals, particularly lead which is most common on the site. These plants must then be harvested and reduced in a controlled incineration so as to remove the metals entirely from the ecosystem.